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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/400,132	09/21/1999	YUNZHOU LI	2204/152	3049
34845	7590	07/27/2005	EXAMINER	
STEUBING AND MCGUINNESS & MANARAS LLP 125 NAGOG PARK ACTON, MA 01720			KLIMACH, PAULA W	
			ART UNIT	PAPER NUMBER
			2135	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/400,132

Applicant(s)

LI, YUNZHOU

Examiner

Paula W. Klimach

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-92 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/9/05 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claims 1-92-** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation "each virtual channel carrying at least one stream of data that is common to all virtual channels associated with the multicast session, but differing in membership." The specification does not disclose the stated limitation.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claims 1-17 and 47-62** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The page 15 line 29 to page 16 line 2 disclose software.

Claims 1-17 are directed to a method of managing virtual channels in a multicast session. The examiner asserts that the collection of information does not fall within the statutory classes listed in 35 USC 101. Thus, while the claimed invention may be labeled as a device/method it is in fact functional descriptive material (i.e., computer program). Claims 1-16 are rejected as being directed to a functional descriptive material (i.e., computer program).

Claims 47-62 are directed to a method of creating a secure multicast session, the multicast session having a plurality of virtual channels, at least one of the virtual channels having a member. The examiner asserts that the collection of information does not fall within the statutory classes listed in 35 USC 101. Thus, while the claimed invention may be labeled as a device/method it is in fact functional descriptive material (i.e., computer program). Claims 47-62 are rejected as being directed to a functional descriptive material (i.e., computer program).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-7, 9, 13-14, 16-22, 24, 28-29, 31-37, 39, 43-44, 47-53, 55, 59-60, 62-68, 70, 74-75, 77-83, 85, 89-90, and 92** are rejected under 35 U.S.C. 103(a) as being unpatentable over Caronni et al. (6,195,751) in view of Wasilewski et al. (5,359,601) and further in view of Aziz (6,330,671).

*In reference to claims 1, 17, 32, 47, 48, 63, 78, and 79*, Caronni discloses a method of managing virtual channels in a multicast session (column 5 lines 23-47), the method comprising: receiving a request from a requestor to join the multicast session (column 7 lines 9-15). The system then forwards a virtual channel key to the requestor (column 12 lines 30-39). In the Caronni system the virtual channel key is sent to all members of the virtual channel (column 11 line 54 to column 12 line 39), during rekeying (column 11 lines 38-47) and when a new group is created (column 11 line 54 to column 12 line 39). During rekeying a new key is calculated and sent to all the members of the group and during the creation of the new group the key holder calculates the key and then each participant that enters the system receives the new key.

Caronni does not expressly disclose joining the multicast session for a time period and selecting a virtual channel by the requestor in response to a desired time period of communication by the requestor.

Wasilewski a system for selecting virtual services which on a time-varying basis (column 6 lines 33-36). The subscriber is allowed to select a service and therefore a channel that depends on time period when the period is over then another service is selected (column 7 lines 1-68).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select the channels on a time-varying basis as disclosed by Wasilewski in the system of Caronni. One of ordinary skill in the art would have been motivated to do this because system operators can re-assign a service to a different interface channel as needed.

Neither Caronni nor Wasilewski discloses each channel carrying at least one stream of data that is common to all virtual channels associated with the multicast session, but differing in membership.

Aziz discloses a channel carrying at least one stream of data that is common to all virtual channels associated with the multicast session, but differing in membership (column 7 line 63 to column 10 line 11).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose the common key to the members of the same group as in Aziz in the system of Caronni. One of ordinary skill in the art would have been motivated to do this because the members of the same group will be able to decrypt the information they require while non-members cannot receive the information.

*In reference to claims 2, 18, 33, 65, 80, Caronni does not teach channels associated with different time durations*

Wasilewski teaches each channel is selected for different time durations (column 7 lines 19-21).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select the channels on a time-varying basis as disclosed by Wasilewski in the system of Caronni. One of ordinary skill in the art would have been motivated to do this because system operators can re-assign a service to a different interface channel as needed.

*In reference to claim 64*, wherein in distribution module the virtual channel key is sent in a unicast session to each member (Caronni column 7 lines 29-39). The control connection is used to transmit the set up information. Set up information includes the key that is used by the participant to communicate in the group.

*In reference to claims 3, 19, 34, 50, 66, and 81*, a system wherein no member can be in more than one virtual channel. Caronni does not expressly disclose

In the system disclosed by Wasilewski the subscriber selecting either one of the basic service selection or one of the dynamic virtual services via the service selection switch (column 8 line 38-56). The selection of only one basic service or one dynamic virtual service is the same as the selection of one channel because that channel is directly related to the service provided on that channel.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to select one channel as disclosed by Wasilewski in the system of Caronni. One of ordinary skill in the art would have been motivated to do this because selecting one service from one channel insulates the subscriber from the complex details of service acquisition.

*In reference to claims 4, 20, 35, 51, 67, and 82*, distributing a data key to each multicast virtual channel (Caronni column 5 lines 23-47).

*In reference to claims 5, 21, 36, 52, 68, and 83* the virtual channels reside within one domain (column 9 lines 50 to column 10 line 35). The group in the system disclosed by Caronni performs the function of a domain. This includes the members of a group sharing a key and therefore security policy and each participant has a unique ID (column 9 lines 57-60).

*In reference to claims 6, 7, 22, 37, 53, 75, and 90*, wherein when membership of the virtual channel change, rekeying of the virtual channel takes place (Caronni column 11 lines 38-47).

*In reference to claims 9, 24, 39, 49, 55, 70, and 85*, wherein a member may join a virtual channel for less than the virtual channel's full time duration (Wasilewski, column 2 lines 53-68). The basic service runs for an indefinite amount of time while the subscriber selects the services desired for the virtual service which has time periods (Wasilewski, column 7 lines 10-30). The time periods that the basic service is selected in the virtual service are less than the full duration of time that basic service, and therefore the channel, is available

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to join a virtual channel for less than the virtual channel's full time duration as disclosed by Wasilewski in the system of Caronni. One of ordinary skill in the art would have been motivated to do this because selecting one service from one channel insulates the subscriber from the complex details of service acquisition.

*In reference to claims 13 and 14, 28, 29, 43, 44, 59, 60, 74, and 89*, the virtual channel is freed when an upper member expires (Caronni, column 13 lines 44-55). The virtual channel is freed after the upper member (first group member) does not transmit a heartbeat for a certain



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amount of time. This results in any other system taking over the key for this group and becoming the owner.

*In reference to claims 16 and 31, 62, 77, and 92, wherein only the freed virtual channel rekeys the virtual channel key to all members of the freed virtual channel (column 13 line 55 to column 14 line 7).*

**Claims 8, 11-12, 23, 26-27, 38, 41-42, 54, 57-58, 69, 72-73, 84, and 87-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over Caronni, Wasilewski, and Aziz as applied to claim 2 above, and further in view of Foladare (6073235).

*In reference to claims 8, 23, 38, 54, 69, and 84, Caronni, Wasilewski, and Aziz do not expressly disclose associating unlimited time duration with a virtual channel creating a permanent virtual channel.*

Foladare discloses assigning channel numbers to different channels (column 1 lines 38-40). Further Foladare teaches the use of a preallocated request channel where a plurality of channels are assigned for a purpose (column 4 lines 14-20), and are therefore permanent with unlimited time duration.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to allocate a permanent channel for a specified purpose as taught in Foladare in the system disclosed by Caronni. One of ordinary skill in the art would have been motivated to do this because ready access to the private broadcasting device may be obtained (column 4 lines 19-20).

*In reference to claims 11, 12, 26-27, 41, 42, 57, 58, 72, 73, 87, and 88, Foladare suggests reassigning time duration for a virtual channel if a virtual channel is freed (column 3 lines 65 to column 4 line 5). The time interval for the communication is on of the variables associated with the channel and as a result changes whenever the communication that uses the channel is changed. Foladare monitors the time estimated time intervals for a channel and therefore can change the time duration for all virtual channels when one is freed.*

**Claims 10, 15, 25, 30, 40, 45, 46, 56, 61, 71, 76, 86, and 91** are rejected under 35 U.S.C. 103(a) as being unpatentable over Caronni, Wasilewski, and Aziz, as applied to claim 2 above, and further in view of Kadansky (6,295,361 B1).

The combination of Caronni, Wasilewski, and Aziz do not expressly disclose creating a lower and upper bound for the virtual channel based on the time duration of the virtual channel.

Kadansky teaches the new and old key being used for a predetermined period of time (Fig.7 column 9 lines 50-53). The predetermined period has an upper bound and a lower bound, which make up the period. The act of reassigning further comprises the step of reconfiguring the lower and upper bounds of all virtual channels. The channels disclosed by Kadansky have new group keys and time values sent when a new channel is created (column 8 lines 29-31), channels are separated by use of different keys.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to create a time period in which a channel is viable as in Kadansky in the combination of Caronni, Wasilewski, and Aziz. One of ordinary skill in the art would have been

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motivated to do this because the key manager needs to coordinate with the senders to make sure that all the senders have received the new key and packet number (column 9 lines 11-15).

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paula W. Klimach whose telephone number is (571) 272-3854.

The examiner can normally be reached on Mon to Thr 9:30 a.m to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PWK  
Monday, July 25, 2005

  
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SUPERVISORY PATENT EXAMINER  
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